UNITED PERFORMANCE METALS
AN ONI COMPANY

THE UPM MARKET INFORMER

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INSIDE THIS ISSUE

Pratt & Whitney's GTF Advantage Cleared For A320neo

Pratt & Whitney has received FAA certification for the upgraded Advantage version of its PW1100G geared turbofan (GTF) that powers the A320neo, marking a key milestone in the engine-maker's long-term push for increased market share on the Airbus single-aisle family.

The improved configuration is the first major derivative of the PW1100G since its debut on the A320neo in 2014, and incorporates a set of materials, design and airflow upgrades in the low- and high-pressure spools. The combination is designed to produce a 4% thrust improvement at sea level and up to 8% at higher elevations, all without increasing operating temperatures. The Advantage also reduces fuel burn by a further 1% compared with the current engine, Pratt says.

"It really is the next evolution of the GTF architecture and right now is the only next evolution so far for any engine on the A320neo," says Rick Deurloo, Pratt's president of commercial engines. "We like that 1% fuel burn, because we already feel we have a pretty strong position on fuel burn versus our competitor, so this only creates a little bit more of a distance."

First production versions of the PW1100G Advantage are expected to be shipped to Airbus around the end of the year with initial entry-into-service due in 2026. Pratt also plans to start a multi-year transition to production of the new engine as the variant later this year, Deurloo says. The new standard engine will be interoperable and interchangeable with the current generation, the manufacturer says.

The changes include increased airflow in the core to lower operating temperatures and an improved hot section to increase time on wing. In the high-pressure turbine (HPT), enhancements include an advanced airfoil design with improved coatings. The HPT and combustor also feature optimized cooling hole size, shape and location, with improved water jet drilling techniques to reduce oxidation.

But elements of the Advantage, which was launched four years ago, will also be used by Pratt to recover ground in its long-running efforts to improve the durability of the baseline PW1100G. The upgraded version incorporates fully redesigned life-limited parts which are targeted at providing full durability right "out of the box," adds Deurloo.

"A lot of the learnings that we got out of the Advantage we're bringing back into the base," Deurloo says. "So even at maintenance, repair and overhaul (MRO) visits today, we've started to incorporate that."

The package of durability enhancements includes the optimized HPT and combustor cooling configuration, advanced HPT first stage blade with improved coatings, and a revised No.3 bearing compartment.

"Probably around a year from now it will be the configuration we deliver as a production engine to Airbus. We are starting with MRO. Then, once we get to rate, we'll start converting over to production as well," he says. To continue reading, please click here.

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Nickel, Cobalt, Stainless Flat Rolled Surcharges

	Dec '24	Jan '25	Feb '25	Mar '25	Apr '25	May '25
15-5	0.8631	0.8601	0.8407	0.8611	*	*
17-4	0.8758	0.8652	0.8454	0.8654	*	*
17-7	0.8558	0.8489	0.8341	0.8401	*	*
201	0.6312	0.6583	0.6354	0.6529	*	*
301 7.0%	0.8354	0.8212	0.7977	0.8135	*	*
302/304/304L	0.9136	0.8984	0.8722	0.8872	*	*
304-8.5%	0.9461	0.9304	0.9033	0.9183	*	*
305	1.1804	1.1613	1.1273	1.1411	*	*
309	1.2636	1.2441	1.2064	1.2194	*	*
310	1.7452	1.7190	1.6667	1.6769	*	*
316/316L	1.4706	1.4416	1.4034	1.4072	*	*
321	0.9652	0.9490	0.9220	0.8370	*	*
347	1.2748	1.3817	1.3526	1.3673	*	*
409/409 Mod	0.2975	0.3200	0.3148	0.3343	*	*
410/410S	0.3448	0.3364	0.3321	0.3515	*	*
430	0.3668	0.3595	0.3495	0.3679	*	*
439	0.3796	0.3724	0.3612	0.3791	*	*
263	6.8385	6.5253	6.7060	7.1718	7.1884	7.0207
276	8.7629	8.8223	9.1071	9.4239	9.2566	9.1197
A286	2.2537	2.2435	2.3476	2.6528	2.6041	2.5825
600	5.2362	5.1826	5.4655	5.5199	5.4036	5.3548
601	4.3988	4.3564	4.5838	4.6630	4.5698	4.5237
617	7.3297	7.1742	7.4113	8.0633	7.9303	7.7905
625	8.4413	8.4504	8.7179	9.4145	9.2794	9.1926
718	7.2765	7.2582	7.4725	8.2080	8.1105	8.0667
X-750	5.6978	5.6475	5.9138	6.9068	6.7851	6.7476
800	2.4473	2.4255	2.5480	2.5652	2.5139	2.4948
825	3.9281	3.9242	4.0926	4.1989	4.1188	4.0647
Alloy X	5.7883	5.8009	6.0216	6.1532	6.0347	5.9355
188	7.6273	6.8786	6.8581	7.9419	7.9064	7.6859
L-605	7.6366	6.7280	6.6430	7.6588	7.6417	7.3466

**Surcharges are not currently available*
Surcharges have been updated from previous posted value due to tariff increases

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Stainless & Nickel Thin Gauge Surcharges

	Dec '24	Jan '25	Feb '25	Mar '25	Apr '25	May '25
301 7%	1.0025	0.9855	0.9572	0.9762	*	*
302/304/304L	1.0963	1.0781	1.0466	1.1392	*	*
304 8.5%	1.0963	1.1165	1.0840	1.1020	*	*
305	1.4165	1.3936	1.3528	1.3693	*	*
316L	1.7647	1.7299	1.8133	1.6886	*	*
321	1.1583	1.1388	1.1064	1.1244	*	*
347	1.5298	1.6580	1.6231	1.6408	*	*
201	7.7684	7.6826	8.1289	8.1095	7.9236	7.8658
600	6.2835	6.2191	6.5586	6.6239	6.4843	6.4258
625	10.1296	10.1405	10.4615	11.2974	11.1353	11.0311
625LCF	10.1296	10.1405	10.4615	11.2974	11.1353	11.0311
718	8.7319	8.7099	8.9671	9.8496	9.7326	9.6800
Alloy X	6.9459	6.9610	7.2259	7.3838	7.2416	7.1226
X750	6.8373	6.7770	7.0965	8.2882	8.1421	8.0971

**Surcharges are not currently available*
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Nickel, Cobalt, Stainless Bar Surcharges

	Oct '24	Nov '24	Dec '24	Jan '25	Feb '25	Mar '25
316LS/316LVM	2.33	2.39	2.27	2.22	2.18	2.19
Custom 455	1.32	1.39	1.32	1.31	1.30	1.33
Custom 465	1.97	2.09	2.01	2.00	1.99	2.00
Custom 630	0.95	0.96	0.91	0.89	0.88	0.93
CCM	10.45	10.39	10.05	9.51	8.91	8.75
625	9.51	9.96	9.53	9.40	9.30	9.25
718	7.10	7.49	7.13	7.05	6.99	6.96
718CR	7.10	7.49	7.13	7.05	6.99	6.96
A286	3.48	3.68	3.50	3.46	3.44	3.44
A2861	3.48	3.68	3.50	3.46	3.44	3.44
A2862	3.48	3.68	3.50	3.46	3.44	3.44
A2867	3.48	3.68	3.50	3.46	3.44	3.44
A286R1	3.48	3.68	3.50	3.46	3.44	3.44
A286SH	3.48	3.68	3.50	3.46	3.44	3.44
Alloy X	7.91	8.27	7.94	7.83	7.72	7.68
Wasp6	8.61	8.92	8.45	8.24	8.06	7.98
L605	11.33	11.30	10.98	10.57	10.13	10.01
321	1.39	1.43	1.33	1.30	1.29	1.31
347	1.40	1.43	1.34	1.30	1.29	1.31
Greek Ascoloy	1.34	1.34	1.31	1.30	1.29	1.32

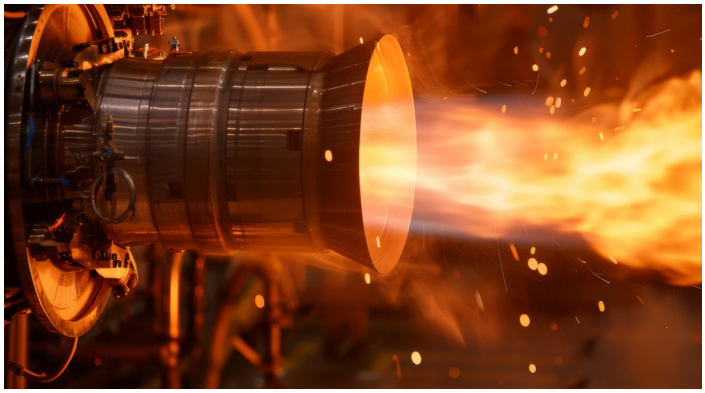
*Surcharges are not currently available

Titanium Surcharges

Form	Grade	Q3 2024 Surcharge	Q4 2024 Surcharge	Q1 2025 Surcharge
TI - SHEET	6AL4V	6.36	5.67	8.23
TI - PLATE	6AL4V	5.30	4.72	4.29
TI - PLATE	6AL4VE	3.62	3.38	3.18
TI - COIL	GR 2	8.92	8.92	8.13
TI - COIL	GR 3	8.92	8.92	8.13
TI - COIL	GR 4	8.92	8.92	8.13
TI - SHEET	GR 2	8.92	8.92	8.13
TI - SHEET	GR 3	8.92	8.92	8.13
TI - SHEET	GR 4	8.92	8.92	8.13
TI - BAR	6AL4V	7.76**	7.35	5.19
TI - BAR	6AL4VE	7.76**	7.35	5.19

**Surcharges are not currently available*
***Updated to correct processing error when first published*

Ursa Major Eyes ‘Iron Dome’ Applications For Its Mid-Size Rocket Engine



Rocket propulsion startup Ursa Major is accelerating development and testing of its Draper liquid rocket engine in collaboration with U.S. defense agencies and military contractors. The goal: to position the engine for potential use in next-generation missiles that would be part of the Trump administration’s Iron Dome missile-defense initiative. Ursa Major last year completed ground tests of the Draper engine, developed with U.S. Air Force funding. These hot-fire tests took place at the company’s facilities in Berthoud, Colorado. Now, the company is planning a flight-testing campaign to further mature the design and explore military applications as well as commercial uses in space tugs and in-space transportation.

“We believe Draper fills a gap that the United States has in its armaments and targets,” said Christopher Spagnoletti, chief product officer at Ursa Major.

The Pentagon’s push for a new missile defense shield highlights the need for better propulsion technology as the Iron Dome calls for high-performance interceptor missiles that can operate from the ground or from space, Spagnoletti noted.

Many current propulsion systems struggle to meet the size and weight requirements of tactical missiles while maintaining necessary performance levels, he said. Draper was designed to offer a liquid-propulsion alternative that provides more flexibility compared to traditional solid rocket motors and air-breathing scramjets.

“Draper has the form factor of a solid rocket motor,” Spagnoletti told SpaceNews.

The engine’s non-cryogenic kerosene peroxide fuel combination would offer a simplified storage solution compared to engines using liquid oxygen. Because these propellants remain liquid at room temperature, he explained, they eliminate the need for complex cooling systems, allowing for long-term storage without special equipment and enabling immediate use when needed.

The Pentagon’s Iron Dome initiative proposes the use of “proliferated space-based interceptors capable of boost-phase intercept.” This means a large number of these weapons would be deployed in orbit around Earth to intercept and destroy incoming missiles during their boost phase, or the initial stage of a missile’s flight when its engines are still burning. To continue reading, please click here.

Virgin Galactic to Start Assembly of First New Spaceplan in March

Virgin Galactic plans to start assembling the first of a new general of suborbital spaceplanes next month with commercial flights expected to start in the middle of 2026.

In an Feb. 26 earnings call, company executives said assembly of the first Delta SpaceShip will start in March at a new facility near Phoenix. That would put the company on a path to begin test flights in the spring of 2026 and commercial flights, starting with research payloads, in the middle of 2026.

“The production and launch timeline for the new ships remains on track, with our first commercial research spaceflight expected in the summer of 2026, and the first private astronaut spaceflight in the fall of 2026,” Michael Colglazier, chief executive of Virgin Galactic, said on the call. “We are able to be more specific with projecting our timelines because we now have line of sight to the delivery dates of each and every tool and part that supprts assembly.”

He used the call to highlight the progress made by Virgin and key suppliers on various components and subassemblies of the vehicle. Those items will be delivered to the Phoenix facility for final assembly and testing of the spaceplane.

The company said it is confident that, once assembled, the spaceplane can quickly go through a flight test program because it is derived from VSS Unity, the suborbital spaceplane it retired last summer.

“Unity required moving in small incremental steps to build up the knowledge about the spaceship’s performance and limits,” said Mike Moses, Virgin Galactic’s spaceline president. “The test flights of Delta will be much more like regression testing, where we are incrementally expanding how Delta flies, but doing so by comparing it to how we know Unity flew.”

Once research flights begin, he said he expected “on the order of 6 to 10” flights carrying research payloads, including employees, that will also serve to test operations before beginning flights of private astronauts.

Colglazier said that, once those private astronaut flights begin, the company expects to quickly accelerate to its planned flight rate of two per week. “We will prudently ramp ourselves up a little bit as we lean into that, but I believe 2027, if not right January 1, right at the beginning of that year, we should be up at a pace that we’ve talked.” To continue reading, please click here.

GE Vernova's New Aeroderivative Solution Goes Online in South Carolina

GE Vernova's new "advanced" aeroderivative solution meant to replace older peaker plants, the LM6000VELOX package, has gone online for the first time commercially.

GE Vernova has announced Dominion Energy's Bushy Park Combustion Turbine (Bushy Park CT) facility achieved the start of commercial operation in Berkeley County, South Carolina, late last year. The 52-megawatt (MW) Bushy Park CT #1, powered by a GE Vernova LM6000VELOX package solution including an LM6000 gas turbine and generator, marked the first LM6000VELOX package plant solution in operation globally.

GE Vernova introduced the LM6000VELOX package in 2023 aiming to reduce the installation and commissioning schedule of LM6000 aeroderivative gas turbines by up to 40%, thereby reducing installation time and costs. The enhancements incorporated in the new package aim to also reduce site construction delays for power generation utilities, EPCs, and other industry stakeholders, the company said.

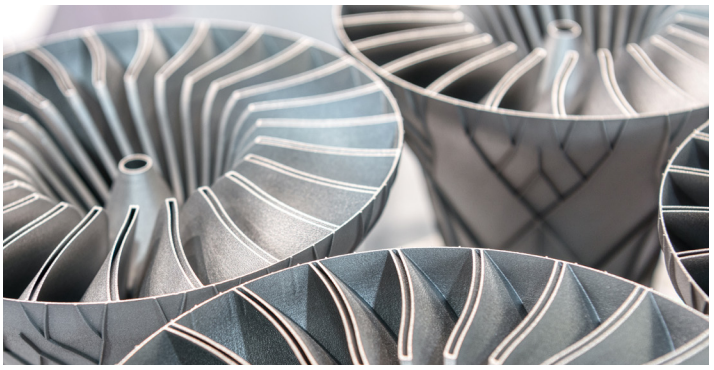
The new LM6000VELOX, along with two other units ordered for Dominion Energy's Parr facility in Fairfield County, South Carolina that are currently under construction, replaced older peaking generation units. In addition to supporting peak usage periods, these dispatchable units complement solar generation on days when sunshine is limited or intermittent throughout the day. The Bushy Park and future Parr units incorporate operational flexibility capabilities including dual-fuel capabilities, fast-starting, synchronous condensing, and black start.

"This project marks the first time this solution is in operation globally and we are delighted to celebrate this milestone with Dominion Energy, " said Dave Ross, president and CEO of GE Vernova's gas power business in the Americas. "This aeroderivative solution can provide dispatchable and lower carbon-emitting power compared to older units, and also important black-start capability necessary for restoring power after a blackout."

GE Vernova is a leading supplier to Dominion Energy, which contributes to meeting the electricity needs of approximately 3.6 million customers in Virginia, South Carolina, and North Carolina.

In addition to the two LM6000VELOX packages currently being installed at Dominion Energy's Parr facility, ten are being installed at Tennessee Valley Authority's Johnsonville Aeroderivative Power Plant in Tennessee, with an expected start of operation later this year. Recently, GE Vernova also announced the first LM6000VELOX packaged solution that is expected to start operation on a 100% hydrogen at Whyalla hydrogen power plant in Australia in 2026. To continue reading, please click here.

ATI Opens Metal Additive Manufacturing Facility For Aerospace & Defense



ATI Inc, Dallas, Texas, USA, has now commissioned its new Additive Manufacturing Products facility. The vertically integrated greenfield build includes design, manufacturing, heat treating, machining and inspection capabilities for large-format Additive Manufacturing.

Along with a ribbon-cutting ceremony, grand opening attendees were able to tour the 12,250 m2 facility to see the advanced manufacturing operations in action, including Laser Beam Powder Bed Fusion (PBF-LB).

"Layer by layer, Additive Manufacturing gives us the ability to produce high-performance, highly complex components for our customers – faster, with less waste," said Kimberly A Fields, ATI President and CEO, commemorating the grand opening with customers, community supporters and industry leaders.

The new operation – built on nearly a decade of experience in Additive Manufacturing – is reportedly capable of manufacturing parts up to 1.5 metres tall in geometries previously considered impossible.

"ATI is a metallurgical leader, developing new alloy powder materials specifically for Additive Manufacturing. In this new facility, we've brought our materials science and forging expertise together with Additive Manufacturing production acumen, delivering high-quality production at scale," said Fields. "From design to finished product, we've formed a powerhouse that solves our customers' most difficult challenges for the most demanding markets: aerospace, defence and space."

Bechtel Plant Machinery Inc (BPMI) awarded ATI its first contract to be produced at the new facility, for highly engineered part solutions in support of the US Naval Nuclear Propulsion Program.

Additive Manufacturing Products has implemented a comprehensive quality system that meets the standards of both ISO 9001 and ASD9100D. The investment, announced in late 2023, is included in the company's existing capital expenditure guidance. To continue reading, please click here.

UPM Additive Rebrands to UPM Advanced Solutions

On February 19, 2025, United Performance Metals launched the rebranding of its additive manufacturing location, UPM Additive Solutions, to UPM Advanced Solutions. This change marks a significant step in the evolution of the division, reflecting its growing capabilities and commitment to providing cutting-edge material solutions to industries worldwide.

With this rebranding, UPM Advanced Solutions expands its focus to encompass a wider range of advanced materials and services designed to meet the needs of rapidly evolving industries such as aerospace, medical, energy, and more. While additive manufacturing remains a cornerstone of its expertise, the new name emphasizes the division's ability to offer innovative solutions beyond traditional additive applications.

"This rebrand is more than just a name change," said JJ Johnson, General Manager of UPM Advanced Solutions. "It symbolizes our commitment to solving complex challenges for our customers by leveraging advanced materials, processes, and expertise. We're excited to take this next step in our journey to provide comprehensive solutions to the industries we serve." While the name is new, the team and commitment to quality remain unchanged.

This rebrand brings expanded expertise by offering a broader range of materials and services to support advanced material applications, as well as continued investment in technology and innovation. UPM Advanced Solutions customers can continue to expect cutting-edge solutions tailored to their needs. To learn more about UPM Advanced Solutions, please click here.

UPM Precision Rerolling Processesing & Applications

To further our commitment and ensure that we are a leading metal service center, UPM moved its rerolling mill operations from Portland, Connecticut to Wallingford, Connecticut in the summer of 2024, expanding services and production capabilities. This relocation was led by Patrick Robb, United Performance Metals Thin Gauge General Manager. To learn more about UPM's Precision Thin Gauge Strip facilty, please click here.

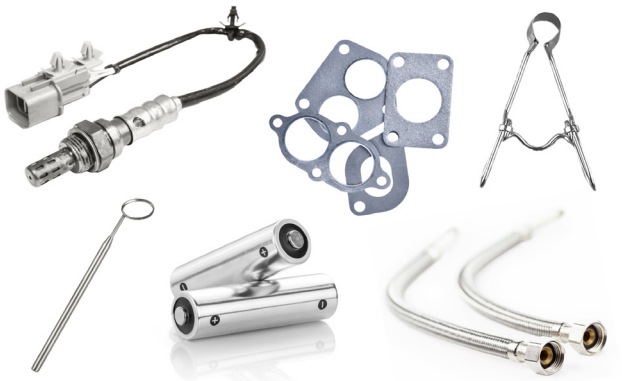
Rerolling mills exist to provide products and services that the larger integrated mills won't or have limitations in supplying. These mills have the ability to produce materials to more stricter customer requirements and develop processes to meet tighter dimensional tolerances and also restrictive material tensile properties. UPM's Thin Gauge Mill works with customers to provide unique supply chain solutions such as stocking programs, shorter lead times, and smaller order quantities. To learn more about UPM's Precision Thin Gauge Strip products, please click here.

The rerolling process is comprised of three steps: cold rolling, annealing, and slitting. Once the material has reached its desired final form, it is packaged for shipping.

Cold Rolling: Cold rolling is a work hardening process that changes the structure of the metal. This process strengthens steel by changing its shape and/or thickness without using heat. The process also often improves the material's corrosion resistance, surface finish, and dimensional tolerances. UPM has the ability to roll from .015" down to .0008" and can roll widths of 12.5" to 8".

Annealing: Annealing is the process of heating a material to a critical temperature to restore its ductility. Annealing allows the material's properties, such as tensile strength, yield strength, and hardness, to "reset." UPM can anneal thicknesses ranging from .015" to .0005" and widths from 16" to 8".

Slitting: Slitting is the process of separating a wide strip into narrow mults or strips. This is a shearing process that uses circular knives to weaken the material to the point of fracture, creating slit strips. UPM's Wallingford facility can slit thicknesses ranging from .020" down to .0008" and widths ranging from 12.500" to .188". Our coils come in 6", 8", 10", 12", and 16" for all of our customers needs.



United Performance Metals currently services stainless steel, nickel alloys, and cobalt for precision thin gauge strip. This material is used in a variety of applications and industries outlined below, with additional use cases continuing to arise:

Aerospace: Airfoils, Baffles, Bellows, Honeycomb, Sensors, Nacelles

Medical: Needles, Sheers, Surgical Grills and Grinders, Surgical Staplers and Anvils, Staples, Lances, Cardiovascular Clamps, Tissue Grabbers, Dental Matrix

Automotive: Air Bags, Fuel Components, Oxygen Sensors, Catalytic Converters, Seals

Electronics: Battery Cans, Shielding, Flexible Foil Heaters

Power Generation: Fuel Cells, Nuclear Fuel, Batteries, Solar

Industrial: Chimney Liners, Filters, Flexible Metal Hoses, Clamps, Diaphragms, Tool Wrap, Gaskets, Seals, Photo-Etch Applications